

Name: _____

Date: _____

Period: _____

Ex:
$$\begin{cases} \text{Equation 1} & y = -3x + 5 \\ \text{Equation 2} & -2x + y = -10 \end{cases}$$

Solve Graphically

Plot the line using the y-intercept (0, y) and the slope, m.

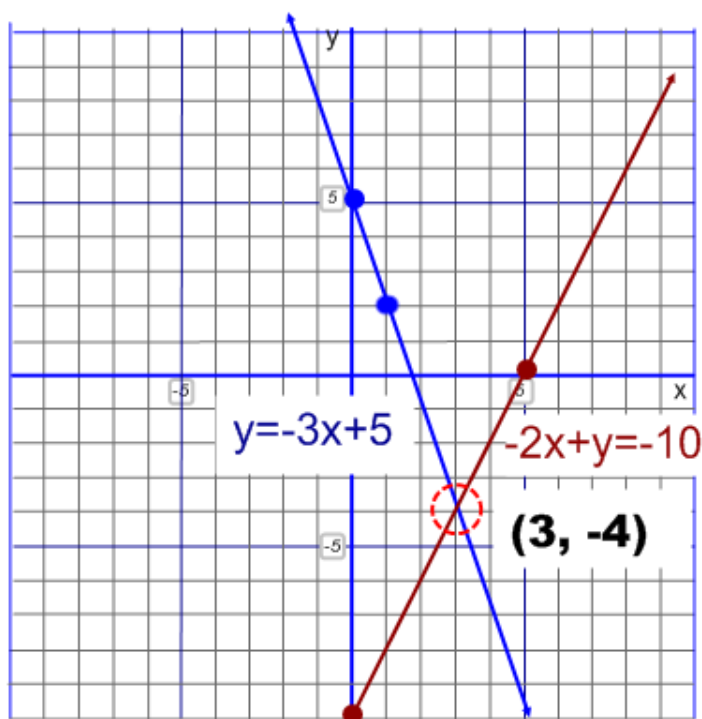
$$y = mx + b$$

$$y = -3x + 5$$

Explain: Start at (0, 5) the y-intercept, then use the slope to find the next point

$$m = -3 = \frac{-3}{1}$$

go down by three and over by 1.



Plot the line using the x-intercept (x, 0) & y-intercept (0, y)

$$Ax + By = C$$

$$-2x + y = -10$$

Explanation

Use the **y-intercept (0, y)**
substitute the x=0 into equation 2.

$$2 \cdot 0 + y = -10$$

Two times zero is zero!, Therefore..

$$y = -10$$

and the y-intercept is (0, -10).

Now use the **x-intercept (x, 0)**
into the same equation

$$-2x + y = -10$$

substitute y=0

$$2x + 0 = -10$$

$$-2x = -10$$

$$x = 5$$

and the x-intercept is (5, 0).

Solve by Substitution

Substitute Equation 1 into Equation 2

$$\begin{cases} \text{Equation 1} & y = -3x + 5 \\ \text{Equation 2} & -2x + y = -10 \end{cases}$$

$$-2x + (-3x + 5) = -10$$

$$-5x + 5 = -10 \quad \text{simplify \& then solve}$$

$$-5x = -15$$

$$x = 3$$

Substitute this value x=3 into equation 1

$$y = -3 \cdot (3) + 5$$

$$y = -9 + 5$$

$$y = -4$$

$$(3, -4)$$

is the solution to both equations

- First solve graphically using the slope-intercept form or standard form.
- Then solve using substitution.

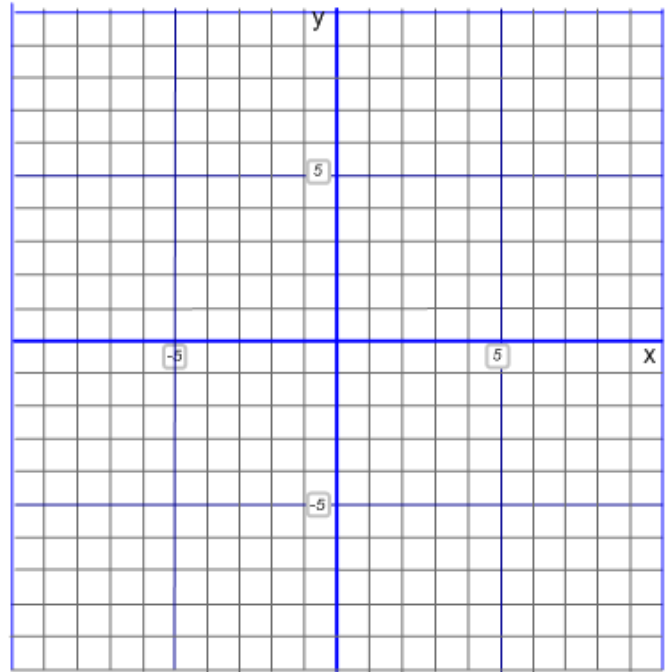
1. Equation 1 $\begin{cases} y = x - 6 \end{cases}$
 Equation 2 $\begin{cases} -x + 2y = -14 \end{cases}$

Solve by Graphing Here

$y = \mathbf{m}x + \mathbf{b}$ Slope-Intercept Form

$Ax + By = C$ $(0, y)$ and $(x, 0)$
 Standard Form: y-Intercept and x-Intercept

Graph Here:



Perform Substitution Below:

Equation 1 $\begin{cases} y = x - 6 \end{cases}$
 Equation 2 $\begin{cases} -x + 2y = -14 \end{cases}$

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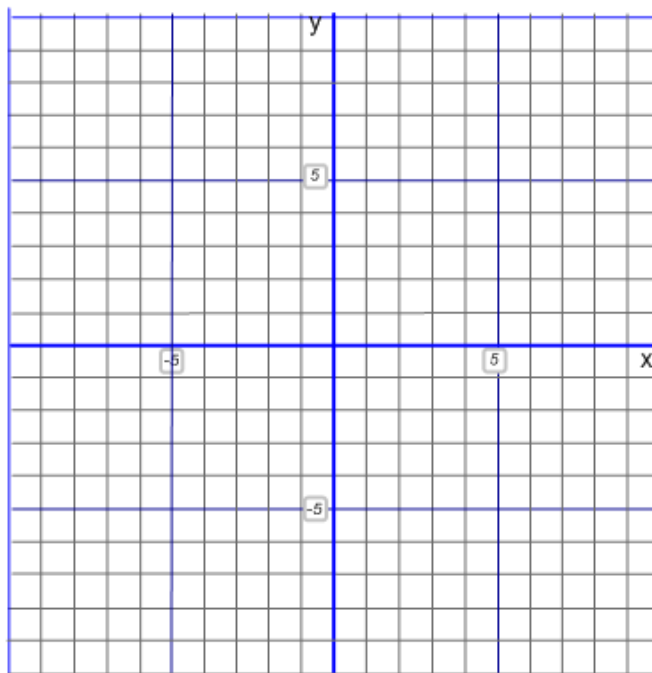
2. Equation 1 $\begin{cases} y = \frac{1}{2}x + 3 \\ \text{Equation 2 } -x + 2y = 10 \end{cases}$

Solve by Graphing Here

$y = \mathbf{m}x + \mathbf{b}$ Slope-Intercept Form

$Ax + By = C$ $(0, y)$ and $(x, 0)$
Standard Form: y-Intercept and x-Intercept

Graph Here:



Perform Substitution Below:

Equation 1 $\begin{cases} y = \frac{1}{2}x + 3 \\ \text{Equation 2 } -x + 2y = 10 \end{cases}$

- First solve graphically using the slope-intercept form or standard form.
- Then solve using substitution.

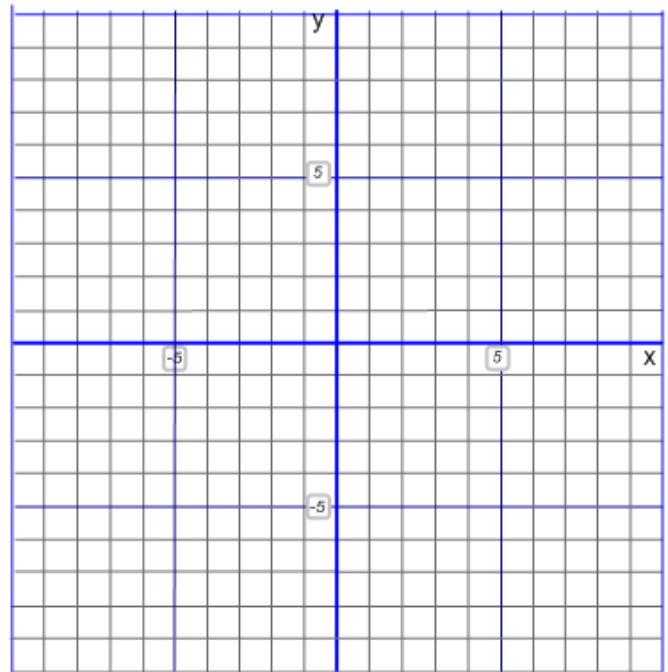
3. Equation 1 $\begin{cases} x + y = -1 \end{cases}$
 Equation 2 $\begin{cases} y = -2x + 3 \end{cases}$

Solve by Graphing Here

$y = m x + b$ Slope-Intercept Form

$A x + B y = C$ $(0, y)$ and $(x, 0)$
 Standard Form: y-Intercept and x-Intercept

Graph Here:



Perform Substitution Below:

Equation 1 $\begin{cases} x + y = -1 \end{cases}$
 Equation 2 $\begin{cases} y = -2x + 3 \end{cases}$

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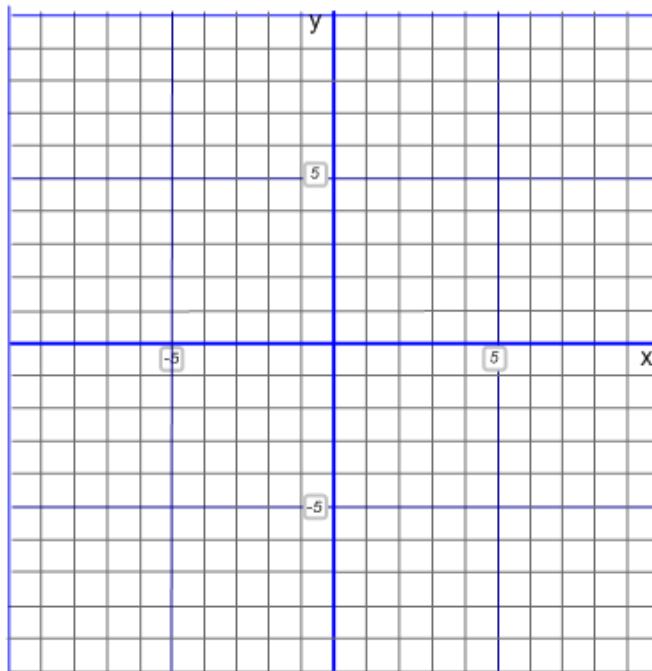
4. Equation 1 $\begin{cases} -5x + 2y = -1 \end{cases}$
Equation 2 $\begin{cases} y = x - 2 \end{cases}$

Solve by Graphing Here

$y = m x + b$ Slope-Intercept Form

$Ax + By = C$ $(0, y)$ and $(x, 0)$
Standard Form: y-Intercept and x-Intercept

Graph Here:



Perform Substitution Below:

Equation 1 $\begin{cases} -5x + 2y = -1 \end{cases}$
Equation 2 $\begin{cases} y = x - 2 \end{cases}$